Claims

What is claimed is:

1. In combination with one or more graft segments configured to operably transport bypass blood flow from a singular supply location to one or more delivery locations in a grafted network, means for directing such bypass blood flow in said grafted network to one or more vascular members, said means comprising:

a multiple channel blood flow connector for coupling first and second graft segments to a first vascular member comprising a first blood flow delivery location, said flow connector including a supply conduit and a delivery conduit integrally formed therewith and adjacently disposed with respect to one another, with said supply conduit and said delivery conduit each having distinct lumen formed therewithin, said supply conduit having first and second opposed open ends having coupling means for operably attaching respective open ends of such first and second graft segments thereto, said supply lumen and said delivery lumen being fluidly connected to one another through cooperating apertures in respective outer walls of said supply conduit and said delivery conduit at an intersection therebetween so as to provide for immediate bypass blood flow from said supply lumen to said delivery lumen, said delivery conduit having at least one open end portion extending from said intersection and beyond an outer circumferential dimension of said supply conduit outer wall, such that a first open end of said delivery conduit is laterally spaced from said supply conduit outer wall, an outer wall of said delivery conduit being formed at said first open end substantially along a plane in angular relationship with a plane parallel to a perpendicular cross-

section of said delivery lumen, such angular relationship being between about 10 degrees and about 80 degrees therebetween, said first open end said delivery conduit being configured for operable implantation directly into the first vascular member so as to provide bypass blood flow thereto, said delivery conduit being specifically sized to provide internal structural support for the first vascular member when said delivery conduit is implanted therein.

2. A means as in Claim 1 wherein said first and second open ends of said supply conduit are tapered such that the thickness of said supply conduit outer wall at said first and second open ends is less than about 50% of the thickness of said supply conduit outer wall at locations between said first and second open ends.

3. A means as in Claim 1 wherein at least said first open end of said delivery conduit is tapered such that the thickness of said delivery conduit outer wall at said first open end is less than about 50% of the thickness of said delivery conduit outer wall at locations between said first open end and said intersection.

4. A means as in Claim 1 wherein said supply conduit and said delivery conduit are in integrally adjacent relationship with one another.

5. A means as in Claim 1 wherein said cooperating apertures have radiused edges.

6. A means as in Claim 1 wherein the first graft segment is operably coupled to the blood flow supply location and said first open end of said supply conduit of said flow connector, and a first end of the second graft segment is operably coupled to said second open end of said supply conduit of said flow connector.

7. A means as in Claim 6, including a flow restricting means disposed downstream from said flow connector and operably coupled to said grafted network adjacent a terminal delivery location thereof opposite the supply location.

8. A means as in Claim 7 wherein said flow restricting means includes first and second open ends operably coupled to respective graft segments in said grafted network, with one of said respective graft segments extending between said flow restricting means and said terminal delivery location.

9. A means as in Claim 8 wherein said blood flow supply location is an aorta, and said terminal blood flow delivery location is an atrium or vena cava of a patient.

10. A means as in Claim 1, including one or more biocompatible coatings on at least inner surfaces of said flow connector.

11. A means as in Claim 7, including one or more biocompatible coatings disposed on at least inner surfaces of said flow restricting means.

12. A means as in Claim 10 wherein at least one of said biocompatible coatings comprises silane, polyvinylpyrrolidine, heparin, and a photo-reactive cross-linking agent.

13. A means as in Claim 11 wherein at least one of said biocompatible coatings comprises silane, polyvinylpyrrolidine, heparin, and a photo-reactive cross-linking agent.

14. A means as in Claim 1, including a biocompatible coating disposed on at least inner surfaces of selected graft segments.

15. A means as in Claim 1 wherein said delivery conduit includes a second end portion having a second end, with said second end portion extending from said intersection in a direction divergent from said first end portion of said delivery conduit.

16. A means as in Claim 15 wherein said first end of said delivery conduit is open, and said second end is closed.

17. A means as in Claim 1 wherein said supply conduit has an external diameter of up to about 8mm and said delivery conduit has an external diameter of up to about 5mm.

18. A means as in Claim 1 wherein said first end portion of said delivery conduit is at least 1mm longer than said second end portion of said delivery conduit as measured from said intersection.

19. A means as in Claim 1 wherein at least said delivery conduit is formed from a selectively expansive material for providing an interference fit between said delivery conduit and the vascular members sufficient to assist in forming a liquid-tight seal therebetween.